QUANTIFICATION OF IMPACTS IN ARTISTIC GYMNASTICS WITH ACCELEROMETRY: AN APPROXIMATION

Sanchez de los Santos, L., Grande Rodríguez, I., Campos Granell, J.

UNIVERSITY OF VALENCIA

Intensity and volume of training in Artistic Gymnastics are increasing as the sooner athlete's age of incorporation creating some disturbance in them. Intensity is commonly measured through impacts and impulses registered by force platforms which suppose a medium-large size and difficult access device for coaches during training sessions. In contrast, accelerometers are smaller, non-invasive and easy-access devices than those ones. The aim of our study was to find the relation between impacts measured with force plate and accelerometers to asses accelerometers values that could be useful to quantify the intensity of gymnast training. Seven female (n=7) gymnasts performed three sets of jump test (SJ & CMJ) and landing test (LT). Accelerometer was fixed on the gymnast's lower back. Peak vertical ground reaction force (N; %BW) and vertical acceleration (m•s-2) during take-off and landing phases as variables were collected to establish a significant correlation between both. There was no significant correlation between vertical force and vertical acceleration values of each test. Results could be influenced by different study limitations as the sample size or the location and sample rate of the accelerometer. This study showed an initial approximation for further research works. It is required to solve some limitations in order to asses that accelerometers, as small and unobtrusive devices, could be a valid and reliable tool for quantifying the intensity of training sessions in Artistic Gymnastics.